REMARKS

Upon entry of this Response, claims 1, 4-9, 11-16, 18-20, and 27-28 remain pending in the present patent application. No amendments have been made to the claims listed above, where the listing of the claims is provided merely for the sake of convenience. Applicants request reconsideration of the pending claims in view of the following remarks.

To begin, in item 1 of the Office Action, claims 1, 4, 6, 7, 9, 11, 13, 15, 16, 18, 20, 27, and 28 have been rejected under 35 USC §103(a) as being unpatentable over the combination of US Patent Application Publication 2002/0073304A-1 filed by Marsh (hereafter "*Marsh*") in view of US Patent 5,156,346 issued to Asco (hereafter "*Asco*"), and in view of US Patent 6,742,025 issued to Jennery (hereafter "*Jennery*"), and further in view of US Patent 7,080,134 issued to Doherty (hereafter "*Doherty*").

For the reasons that follow, Applicants respectfully assert that the cited combination of references fails to show or suggest the elements of each of these claims. Accordingly, Applicants respectfully request that the rejection of these claims be withdrawn.

To begin, claim 1 recites as follows:

1.   A computer system, comprising:
        a central processor unit (CPU);
        a programmable read only memory (ROM) coupled to said CPU,
said ROM containing a digital image;
        wherein said CPU programs its ROM during a system initialization
by the CPU, wherein the system initialization further comprises a booting
of said system;
        a connection to a network and wherein, during the system
initialization, said system sends a message to a server coupled to the
network to determine whether an upgraded image is available for said
ROM; and
        wherein, during the system initialization, said system receives an
upgraded image and flashes said ROM with the upgraded image before
loading any portion of the operating system in a random access memory
associated with the CPU if the upgraded image is available for said ROM.

As set forth above, claim 1 recites that during the system initialization, the system receives an upgraded image and flashes the ROM with the upgraded image before the loading of any portion of the operating system in the random access memory associated

with the CPU. In addressing at least this element of claim 1, the Office Action splits apart the element into segments and addresses them individually. In particular, the Office Action states:

> In regard to claim 1, Marsh discloses: ... *"... flashes the system ROM with the upgraded image if the upgraded image is available for said ROM."* (e.g., see Fig. 6 and page 5, paragraph [0047] and [0048]), wherein, the delivered firmware is the received upgraded image and the flash application flashes the ROM and installs the upgraded image.

In addition, the Office Action further states:

> Marsh, Asco and Jennery disclose the system as described above. But they do not expressly disclose " *before loading any portion of the operating system in a random access memory associated with the CPU...*" However Doherty discloses:
> - *"...before loading any portion of the operating system in a random access memory associated with the CPU...*" (E.g., see Fig. 2 & Column 1, lines 23-26), wherein at boot up before loading an operating system into main memory, a client may request instructions which install an operating system. Additionally, it should be noted that Doherty also discloses that the BIOS 220 is distinct from an operating system that client may boot to during boot-up (see Column 4, lines 4-7)
> Doherty, and the combined teaching of Marsh, Asco and Jennery, are analogous art because they are both concerned with the same field of endeavor, namely, an automated method to update software. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use Marsh's teaching of updating software by flashing the ROM upon startup (see Marsh above), with Doherty's teaching of receiving the instructions to do so during start up as well. The motivation to do so would have been to further achieve Marsh's objective of "...avoiding manual intervention..." (Page 2, Paragraph [0013]), and Asco's objective as disclosed above.

Office Action, pages 6-7. Applicants respectfully disagree with at least the above statements in the Office Action. In particular, Applicants note that *Marsh* states at paragraphs [0047] through [0049] as follows:

> [0047] Having briefly described a network environment 600 (FIG. 5), which may support remote application of the firmware patch 500, reference is now directed to FIG. 6, which illustrates a method for delivering and installing firmware upgrades that may be practiced via a computer system coupled to the network of FIG. 5. As illustrated in FIG. 6, a method for

performing firmware upgrades 700 may begin with step 705, herein labeled, "Start." Next, as indicated in step 710, the method for performing firmware upgrades 700 may deliver a firmware install patch to a boot disk (e.g., the fixed data storage device 310) on each computer system 100 (FIG. 1) that is designated to receive the firmware upgrade. Once the firmware install patch has been stored on the boot disk within a computer system 100 (FIG. 1), the install application 554 (FIG. 4B) may be initiated as shown in step 715. The method for performing firmware upgrades 700 may continue by performing a verification of the firmware version presently operative on the respective computer system 100, as indicated in the query of step 720. If the determination in step 720 is negative, the method for performing firmware upgrades 700 may be configured to notify an operator that the presently installed firmware is incompatible with the intended firmware upgrade as shown in step 725. Having notified the operator, the method may proceed to terminate, as indicated by the flowchart of FIG. 6.

[0048] Otherwise, if the determination in step 720 is affirmative, the method for performing firmware upgrades may continue by performing step 730 where the system loader 410 (FIG. 3) may be configured to select the flash application 556 (FIG. 4) upon the next boot of the computer system 100 (FIG. 1). Next, the install application 554 (FIG. 4) may trigger a boot of the microprocessor 112 (FIG. 1) as indicated in step 735. With the flash application 556 (FIG. 4) designated in the modified boot image 550 (FIG. 4), the method for performing a firmware upgrade 700 may proceed by executing the flash application 556 (FIG. 4) as shown in step 740. With the computer system appropriately configured to allow the microprocessor 112 (FIG. 1) to install the firmware upgrade into the non-volatile memory device 330 without compromising the operating system, the method may now use the firmware update logic 570 and the non-volatile memory interface 580 from the flash application 556 (FIG. 4) to load the new firmware as shown in step 745. As illustrated in step 750, the method for performing firmware upgrades may use the flash application 556 (FIG. 4) to select the operating system 434 (FIG. 2) upon the next boot of the computer system 100 (FIG. 1).

[0049] Having installed the firmware revision 552 (FIG. 4) in the non-volatile memory device 330 of the computer system 100 (FIG. 1) in step 745, and reset the system loader configuration file 420 (FIG. 2) to select the operating system kernel for transfer into RAM 320 (FIGS. 1-3), the install application 554 (FIG. 4) may be configured to boot the microprocessor as indicated in step 755. As further illustrated in step 760 of the flowchart of FIG. 6, the method for performing firmware upgrades 700 may be configured to pause while the newly installed firmware revision 552 (FIG. 4) executes and the reconfigured system loader 410 transfers the operating system kernel into RAM 320 (FIGS. 1-3). Once the

boot process has completed, the method for performing firmware upgrades 700 may be configured to clean up the file system by removing the flash application 556 and the firmware revision 552 from the on the fixed storage data device 310 (FIG. 1), as illustrated in step 765. The method for performing firmware upgrades 700 may then terminate as indicated in step 770 herein labeled, "End."

In addition, at column 1, lines 23-36, *Doherty* states as follows:

In a typical management environment, a client may include a network card that is configured to communicate with a remote server. At a boot-up, but before loading an operating system into main memory, a client may contact a management server and request instructions therefrom. Such instructions may cause the client to boot to disk, reformat a disk or disks of the client, or install a predetermined OS on the client. Software may be downloaded from a remote location over the network, such as from the management server or another network device accessible to the client. Specifically, Intel Corporation offers an OS distribution system known as a Preboot Execution Environment (PXE) system. PXE-enabled clients may be managed by remote PXE servers.

Further, the Office Action notes that *Doherty* discloses that the BIOS 220 is distinct from an operating system at col. 4, lines 1-22, which states:

Client 201 may include a network adapter card, such as a PXE-enabled card, or network circuitry integrated within client 201. Client 201 may include a basic input/output system (BIOS) 220. BIOS 220 is distinct from an operating system that client 201 may boot to during boot-up. BIOS 220 may be implemented in a volatile or non-volatile memory such as FLASH memory. BIOS 220 may comprise an indicator 230, a checking mechanism 240, a changing mechanism 250, and a boot sequence 260. The components of BIOS 220 may be implemented in hardware or software, or a combination thereof.

Indicator 230 signifies whether a previous boot-up of client 201 was to a management server. Indicator 230 may comprise a counter or a flag of one or more bits. Indicator 230 may initially be set to zero. In an exemplary implementation, zero may signify that a previous boot-up was a local boot-up. Indicator 230 may be set to a value of one to signify that a previous boot-up was to a management server.

Checking mechanism 240 checks the value or status of indicator 230 at boot-up. Changing mechanism 250 may change boot sequence 260 if indicator 230 signifies that the previous boot-up of the client was to a management server.

Applicants respectfully disagree with the contentions of the Office Action. First, the Office Action points to *Marsh* as setting forth the element of flashing the system ROM with the upgraded image if the upgraded image is available for said ROM. Although, *Marsh* does describe flashing a ROM with an upgraded image, this is not the only concept that *Marsh* describes. In particular, as set forth above, the operating system is booted in order to facilitate the download of upgraded firmware and the computer system is then rebooted in order to allow for the firmware to be installed on the ROM. As such, *Marsh* does not show or suggest the concept of flashing the ROM with an upgraded image before the loading of any portion of the operating system in RAM.

In this manner, *Marsh* <u>teaches away</u> from the concept of flashing the RAM before an operating system is executed in a computer. To this end, *Marsh* suggests that the firmware such as the BIOS system cannot be installed until the operating system is loaded. As a result, a user has to wait for the system to reboot in order to have the firmware upgraded. This results in an unwanted waste of time and annoyance to a user. Thus, *Marsh* teaches away from the concept of upgrading firmware before an operating system is loaded into a RAM and executed on a computer.

In addition, the Office Action points to *Doherty* as describing "before loading any portion of the operating system in a random access memory associated with the CPU." *Doherty* describes the function of a basic input/output system ("BIOS") in causing a computer system to boot up with either a local version or a remotely stored version of an operating system. The computer system can boot up with an operating system stored on a hard drive, or with an operating system that is stored in a management server. *Doherty* further describes the upgrade of an operating system or other application on the computer system. It does not describe the upgrade of the BIOS.

As such, *Doherty* teaches away from upgrading the BIOS system or firmware on the ROM without loading a portion of the operating system. In fact, *Doherty* merely describes the loading of an operating system from either a server or a local hard drive and has nothing to do with the upgrade of the firmware or BIOS. While it is true that *Doherty* describes execution of the BIOS before an operating system is loaded, such is true about the operation of any computer system.

"The relevant portions of a reference include not only those teachings which would suggest particular aspects of an invention to one having ordinary skill in the art, but also those teachings which would lead such a person away from the claimed invention." Application of Mercier, 515 F.2d 1161, 185 U.S.P.Q. 774, 778 (C.C.P.A. 1975); *see also* Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 230 U.S.P.Q. 416 (Fed. Cir. 1986). Reliance on isolated portions of a prior art reference without considering the over-all context within which those teachings are presented is nothing more than the use of impermissible hindsight reconstruction. Id. This is especially the case where the over-all context teaches away from the claimed invention as, without the benefit of the claims, "a person having ordinary skill in the art would not know what portions of the disclosure of the reference to consider and what portions to disregard as irrelevant, or misleading." Id.

Applicants object to the piecemeal approach taken to the claims in order to combine the references in order to reject the claims in this case. In particular, by separating the element of "said system receives an upgraded image and flashes said ROM with the upgraded image before loading any portion of the operating system in a random access memory" into two portions, the Office Action is able to read the portions of the element onto separate references even though the references clearly teach away from the overall proposition set forth in the claim. Applicants assert that without having the instant claims as a roadmap, one skilled in the art could not read the combination of references and arrive at the subject matter of the instant claims. The cited combination of references can only be made with the use of impermissible hindsight construction using the instant claims as a blueprint given the piecemeal nature in which the references have been combined in the present Office Action.

Also, the Office Action must establish suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or combine reference teachings resulting in the claimed invention. Mere conclusory statements or mere reference to common knowledge can not be relied upon as motivation to combine or modify references. When general knowledge is relied upon, the "knowledge must be articulated and placed on the record." Also, conclusory statements cannot be relied upon when dealing with particular

combinations of prior art and specific claims. Rather, the rejection must set forth the rationale upon which it relies. In re Sang Su Lee, 277 F.3d 1338, 61 USPQ2d 1430, (Fed. Cir. 2002). As motivation to combine the references, the Office Action states "to do so would have been to further achieve *Marsh's* objective of avoiding a manual intervention." This is a conclusory statement in view of the fact that both *Marsh* and *Doherty* teach away from the concept of upgrading the firmware before unloading of the operating system into a RAM. The conclusory nature of the statement of the motivation to combine in this case further points to the fact that impermissible hindsight reconstruction was used to generate the rejection of the instant claims.

Accordingly, for the foregoing reasons, Applicants respectfully request that the rejection of claim 1 be withdrawn. In addition, Applicants request that the rejection of claims 9, 16, and 27 be withdrawn for the reasons described above with respect to claim 1 to the extent they apply. Also, Applicants respectfully request that the rejection of claims 1, 4, 6, 7, 11, 13, 15, 18, 20, and 28 be withdrawn as depending from claims 1, 9, 16, or 27.

In item 3 of the Office Action, claims 5, 12, and 19 stand rejected under 35 U.S.C. §103 as being unpatentable over *Marsh*, *Asco*, *Jennery*, and *Doherty*, and further in view of U.S. Patent 6,594,757 issued to Martinez (hereafter *"Martinez"*). Claims 5, 12, and 19 ultimately depend from claims 1, 9, and 16 as amended herein. Accordingly, Applicants request that the rejection of these claims be withdrawn for the same reasons described above with respect to claims 1, 9, and 16.

Next in item 4, claims 8 and 14 have been rejected under 35 U.S.C. §103 as being unpatentable over *Marsh*, *Asco*, *Jennery*, and *Doherty*, and further in view of U.S. Patent 6,009,524 issued to Olarig et al. (hereafter *"Olarig"*). Claims 8 and 14 ultimately depend from claims 1, and 9, respectively. Accordingly, Applicants request that the rejection of claims 8 and 14 be withdrawn for the same reasons described above with respect to claims 1 and 9.

CONCLUSION

It is requested that all outstanding objections and rejections be withdrawn and that this application and all presently pending claims be allowed to issue. If the Examiner has any questions or comments regarding this Response, the Examiner is encouraged to telephone the undersigned counsel of Applicants.

Respectfully submitted,

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